

# Appendix B, Chapter 21

## Osprey

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## 21.0 Osprey (*Pandion Haliaeetus*)

The osprey (*Pandion haliaetus*) is a large piscivorous bird of prey that nests and feeds along the lower Columbia River in spring and summer. Ospreys have nearly worldwide breeding distribution; birds that breed in the Pacific Northwest migrate to wintering grounds in southern Mexico and northern Central America (Martell et al. 2001). Ospreys nest in forested riparian areas along lakes, rivers, or coastlines; nests are situated atop trees, rock pinnacles, or artificial structures such as channel markers or power/light poles (Poole et al. 2002, Henny et al. 2003a). Adult pairs are thought to mate for life and return to the same area annually for breeding (Poole et al. 2002). Generally, adults spend approximately one month on the breeding grounds before egg laying (Henny et al. 2003a); egg incubation takes about 5 weeks and nestlings are ready to fly approximately 7-8 weeks after hatching (Poole et al. 2002). Along the lower Columbia River during 1997 and 1998, osprey productivity was estimated at 1.64 young/active nest, which is higher than the generally recognized 0.80 young/active nest needed to maintain a stable population (Henny et al. 2003a). Ospreys feed almost exclusively on fish and are not particular about the species of fish they consume (Poole et al. 2002). In the lower Columbia and Willamette Rivers, largescale suckers are an important part of the osprey's diet; ospreys remain close to the nest for feeding (Henny et al. 2003a, 2003b).

The osprey has several advantages as a monitoring species for the health of the Columbia River. The osprey population was studied in detail in 1997 and 1998, and the population nests all along the river up to Umatilla. These earlier data (size of nesting population by river segment, reproductive performance, and residue concentrations in eggs) provide the baseline for comparison with similar data collected in the future to help address contaminant trends over time. Furthermore, residue concentrations in eggs can be compared among locations along the river, such as above and below dams, cities, or other point sources of contaminants. For example, higher PCB concentrations in osprey eggs were detected below Bonneville Dam compared to concentrations above the dam. Other advantages for having the fish-eating osprey as a contaminant monitoring species include:

- Osprey feed primarily on fish close to their nest sites and integrate contaminant exposure in the local area,
- Osprey are at the top of the food chain and are susceptible to biomagnification effects of contaminants (e.g. many contaminants biomagnify from 10 to 100 fold from fish to osprey eggs (Henny et al. 2003b)), and

Productivity of conspicuous nesters can be monitored in an attempt to establish a response that is linked to population processes.